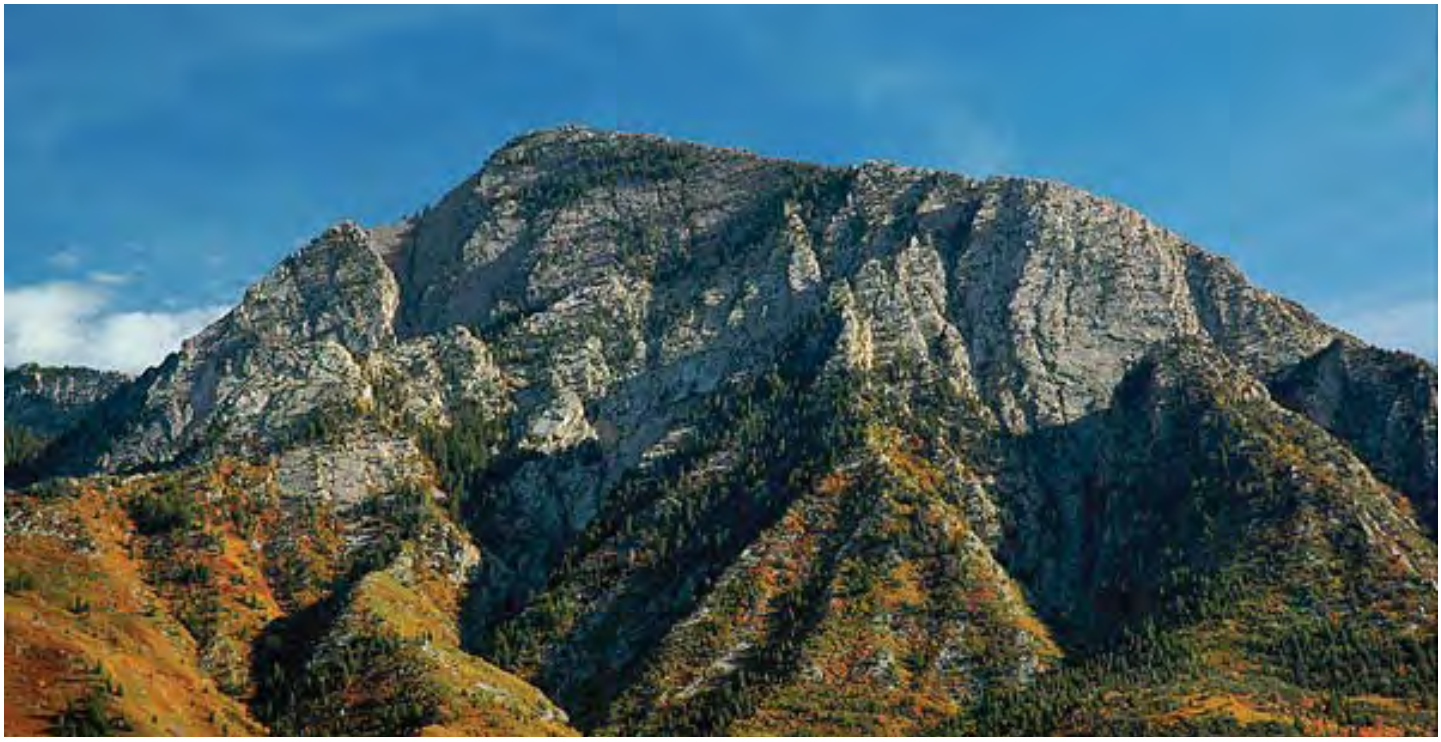
WIRED

Workforce Innovation in Regional Economic Development

Creating a better qualified Life Science workforce for Utah

The State of Utah was selected by the Department of Labor to receive the WIRED Grant. The focus of the grant is to create a qualified workforce for the Life Science Industry in our state.

We invite you to come and learn more about this unique and innovative program and to meet with the many state and private institutions that are collaborating in this effort to build the talent pipeline for the technical workforce of tomorrow. Learn how your company can benefit from this program and how industry can help the effort. The partner institutions described in this brochure are involved in this effort.



Governor's Office of Economic Development

Organization's major WIRED goals and objectives	The Governor's Office of Economic Development serves as the programmatic lead for the WIRED initiative. We help to support the implementation of the initiative, facilitate partnership development as well as sustainability efforts for all WIRED partners. We help to promote the initiative to make sure that it serves the entire State and the life science and technology industry. The overarching outcome is to support activities that result in a qualified workforce for the life science and technology-based industries in Utah.
Major WIRED milestones	We have created a network of partners that have implemented outreach and education and training programs that are producing quantifiable results.
Key strategic partners in WIRED	Higher and public education, industry, government and community or philanthropic
Positive impacts and outcomes to date	We are in the process of completing an asset map of all informal and formal science, technology, math and engineering education efforts in the State. This information will be used to create a tool for students, educators, administrators and parents to help make connections between an interest in science and technology to available education and training to programs and ultimately to the jobs and companies.
Ideal industry partner to support organization's efforts	We are looking to any industry partner that is directly engaged in life science efforts as well as support services (e.g., patent attorneys, medical writers etc). We also look to partners that have an interest in improving science, math, engineering and technology education in the State.
How such an industry partner would be involved in the future	• Help to promote the WIRED initiative • Provide financial and in-kind support to WIRED activities • Collaborate on grants • Serve in an advisory capacity Utah Governor's Office of Economic Development
Industry partner contact	Tami Goetz, State Science Advisor, 801-674-2405, tgoetz@utah.gov

Department of Workforce Services

Organization's major WIRED goals and objectives	• The WIRED grant was awarded by the U.S. Department of Labor (DOL) and funded at $5.16 million. The Utah Department of Workforce Services (DWS) acts as the fiscal agent for this grant. In addition, DWS provides staff to the implementation steering team. • DWS offers online employment exchange system for employers and job seekers, which allows employers to search for qualified applicants via a keyword or skill. DWS offers economic and occupational data on its jobs.utah.gov website and employments counseling.
Major WIRED milestones	Contract execution with all WIRED partners
Key strategic partners in WIRED	DWS works with all WIRED partners to assist in meeting their milestones and the goals outlined in the plan.
Positive impacts and outcomes to date	WIRED has facilitated new and increased collaboration between the partners. Joint efforts outside the scope of the present WIRED plan have resulted, benefiting the partners, as well as students and the general public. The WIRED model and its funding has been used as leveraging for additonal sources of funding.
Ideal industry partner to support organization's efforts	DWS and the State Workforce Investment Board work with industry and education partners from all areas of expertise.
How such an industry partner would be involved in the future	DWS encourages any interested Life Science industry partners to consider membership on the State Workforce Investment Board or one of its Regional Councils. The membership role includes assisting in defining the direction of workforce development efforts in Utah. DWS further encourages industry partners to become involved on a local level in public and higher education classrooms and advisory groups in their area.
Industry partner contact	Lynn Purdin 140 East 300 South Salt Lake City, UT 84111 Phone: 801-526-9755 Fax: 801-526-9238 Lpurdin@utah.gov jobs.utah.gov Utah's Job Connection

Granite School District

Organization's major WIRED goals and objectives	Problem: a) Students have little opportunity to learn hands-on in a real research environment; b) most education in secondary systems does not support student application of learned technical and academic skills Solution: Biomanufacuturing Training Program – This training program provides a seamless articulation for students from high school to Salt Lake Community College. Students receive industry-based curriculum that supports building skills that directly link to employment opportunities in industry. Postsecondary options include: certificates, diplomas and associate degrees in biomanufacturing. InnovaBio provides supervised internships in the biomanufacturing industry. Companies bring research to the Granite Technical Institute and Salt Lake Community College. Students, under the direction of a lab manager, complete the research in a hands-on internship. Skills developed through InnovaBio support student success as they apply for internships with BiG residents. The BioInnovations Gateway provides a mechanism that supports hands-on application of both technical and academic skills in a real world environment. Students will use skills gained through the Biomanufacturing training programs in internships working with startup companies. Granite School District through the Granite Technical Institute has provided space for the BiG facility which consists of office and laboratory space adjacent to, but separately secured and administered from the academic GTI biotech/ biomanufacturing and InnovaBio™-GTI facilities.
Major WIRED milestones	Facility completion (near completion for both Biomanufacturing Training labs and the BiG facilities) estimated completion: 4/30/09 Secondary curriculum alignment with Salt Lake Community College curriculum Teachers hired: Jelena Jensen (bioman science/research), Kevin Hanly (manufacturing) Feasibility/sustainability plan completed Equipment ordered and being installed
Key strategic partners in WIRED	Salt Lake Community College, USTAR, Wade Hull, ZARS, Jeff Nelson, Nelson Labs, Daw Tech, Department of Workforce Services, GOED
Positive impacts and outcomes to date	Significant support and feedback from industry partners in planning and retrofitting the facility Development of flexile curriculum that directly aligns with industry needs
Ideal industry partner to support organization's efforts	Companies involved in both biotechnology research and design and biomanufacturing, Biotechnology Associations, District and state academic specialists (language arts, math, science), Sector specialists from Department of Workforce Services
How such an industry partner would be involved in the future	Review of curriculum, Equipment donations, Advisory committees, Classroom speakers, Job shadows, Mentors, Internships
Industry partner contact	***Sandra Hemmert*** Granite School District Career & Technical Education 2500 South State Street Salt Lake City, UT 84115 Phone (801) 646- 4340 email: smhemmert@graniteschools.org

Salt Lake Community College

Organization's major WIRED goals and objectives	**Problem:** There is a need to provide training to develop a skilled technician workforce for manufacturing to meet the technical demands for the life science industry **Solution:** Salt Lake Community College (SLCC), in partnership with Granite Technical Institute (GTI) is developing the first Biomanufacturing program in the State that will provide training in quality assurance and control, process validation, FDA regulations and working in a GLP/GMP-compliant environment. **Target Population:** These programs provide training pathways for high school and undergraduate students. There will also be accelerated training for incumbent workers.
Key strategic partners in WIRED	Granite Technical Institute, Program Advisory Council
Positive impacts and outcomes to date	Flexible, workforce-oriented curriculum model has attracted State-wide and national attention for best practices in curriculum development.
Major WIRED milestones	• Course curriculum for degree programs developed • Courses implemented beginning January 2009 • GTI Biomanufacturing training facility remodeling nearly complete
Ideal industry partner to support organization's efforts	The Biomanufacturing seeks to partner with all entities involved in R&D, regulatory and production aspects of biological and biomedical products and devices.
How such an industry partner would be involved in the future	• Serve on Program Advisory Committees • Help to promote program • Provide short-term instruction
Industry partner contact Salt Lake Community College	Clifton Sanders, Dean, School of Science, Mathematics & Engineering, 801-957-4877 clifton.sanders@slcc.edu Dr. Vivian Ngan-Winward, Director, Biomanufacturing Program, 801-957-6210 vivian.ngan-winward@slcc.edu Karen Gunn, Dean, School of Professional and Economic Development, 801-957-4366 karen.gunn@slcc.edu

Utah Valley University

Organization's major WIRED goals and objectives	• Establish four-year Biotechnology degree • Establish six high school biotech concurrent enrollment programs • Equip each of those programs with good reliable instruments. • Conduct summer biotech workshops for high school faculty and summer camps for students • Initiate an Innovabio program on UVU campus	
Major WIRED milestones	• Four-year program launched Fall 2008; 88 declared majors. • We have identified the 6 schools who have qualified instructors and space. • One high school already implemented BTECH 1010 concurrent enrollment. • One summer instructor workshop was already held summer 2008; in preparation for 2009 camps.	
Key strategic partners in WIRED	• Nebo School District With Salem Hills and Maple Mountain High Schools • Provo School District with Provo High School • Wasatch School District with Wasatch High School • Alpine School District with Lone Peak High School and Mountain View High School • Salt Lake Community College	
Positive impacts and outcomes to date	• Raised awareness of the new biotechnology program in school districts. • Working relationships have been established with the partners. • The first WIRED high school partner has been equipped through WIRED funds and students are enrolled in a UVU concurrent enrollment biotechnology course.	
Ideal industry partner to support organization's efforts	The ideal partner would be a visionary life science company willing to guide and support preparation of their future work force.	
How such an industry partner would be involved in the future	• Serve on Program Advisory Board (curriculum material and course development) • Provide internship opportunities for biotechnology students	
Industry partner contact UVU UTAH VALLEY UNIVERSITY	James V. Price, Professor, Dept of Biology E-mail: pricejm@uvu.edu Phone: 801-863-7447 Fax: 801-863-8064	Louise Illes, Asst Dean of Science & Health E-mail: ILLESLO@uvu.edu Phone: 801-863-6040 Fax: 801-863-8064

USTAR – BioInnovations Gateway

Organization's major WIRED goals and objectives	**Problem:** a) Students have little opportunity to learn hands-on in a real research environment; b) Life science start-up companies need access to state-of-the-art equipment and trained technicians. **Solution:** The BioInnovations Gateway (BiG)provides a mechanism to mutually benefit research-based training, biotech start-up businesses, and educational activities through use of shared facilities, equipment, technical resources, and talent. The BiG facility consists of secure office and laboratory space which is adjacent to the academic biotech/ biomanufacturing and InnovaBio™ facilities.
Major WIRED milestones	• Feasibility/Sustainability Plan contracted for and completed • Facility designed and built out to accommodate classes and space for 7 companies • Memorandum of Understanding developed to guide operations • Targeted opening for late April '09 • Operating Documents under development • Laboratory equipment ordered
Key strategic partners in WIRED	• Granite School District • Salt Lake Community College • United Natural Products Association • Intermountain Biomedical Association
Positive impacts and outcomes to date	• Positive projections from Financial/Sustainability Analysis • Industry Focus Groups provided input • State-of-the-art facilities
Ideal industry partner to support organization's efforts	Biotechnology Associations, Large corporate sponsors, Educational non-profits
How such an industry partner would be involved in the future	• Direct financial support • Equipment donations • Seminar Speakers • Mentors for incubator clients • Service Providers for incubator clients
Industry partner contact	Suzanne Winters, Ph.D. - USTAR Technology Outreach Director 801-957-5238 phone 801-957-3488 Fax suzannewinters@utah.gov www.innovationutah.gov

Salt Lake City School District

Organization's major WIRED goals and objectives	Our WIRED goal is to engage student interest in the life sciences in K-9, thus engaging and preparing students earlier in their education pathway. This will help to create a career pathway into the high school biotechnology programs and life science workforce.
Major WIRED milestones	The Salt Lake City School District (SLCSD) has been tremendously successful in leveraging the funding to create enhanced life sciences opportunities for both students K-9 as well as those 16+. We have leveraged to date $1.5 million to support the District objectives to create awareness and interest in a life science workforce pipeline. These funds have been used to: • Place green house labs at 16 K-8 sites throughout the District. • Provide K-12 professional development opportunities for teachers. • Provide toolkits and lesson plans with supplies based on state core requirements that give students hands on, experimental learning opportunities in STEM areas. • Support math/science mentoring and tutoring for 5-9th graders after school. • Pilot the new Faces of Fitness program that links science and technology to life-long healthy lifestyles thorough sports and nutrition for students and their families.
Key strategic partners in WIRED	Key partners have included Salt Lake Education Foundation, Salt Lake City Mayor's Office, Lowe's, Daniels Fund, U. S. Dept. of Education, Big Brothers Big Sisters, UPS, One Revolution, Wasatch Community Gardens, University of Utah WEST Fellows and biology dept., Utah State Extension Service, Salt Lake Bicycle Collective, Junior League of Salt Lake, and others.
Positive impacts and outcomes to date	New biotechnology program (with a natural and agricultural products focus) serving 55 students at West High School (in its first year). New parent and student awareness of and interest in science in general and potential life sciences career pathways. Over 60 teachers have completed 12-16 each hours of professional development and instruction on enhanced life sciences curriculum and classroom activities. By June 18 school sites will have dedicated green house labs and outdoor classroom space for experiential life sciences learning activities.
Ideal industry partner to support organization's efforts	We are concentrating on focusing our partnership and cultivation activities on the natural products, agriculture, environmental science and outdoor recreation industries.
How such an industry partner would be involved in the future	Ongoing sustainability of our programs at the conclusion of the grant
Industry partner contact	Cynthia Holz, M.S., CFRE Salt Lake City School District Office of Development and External Relations 801-578-8345

Utah State University

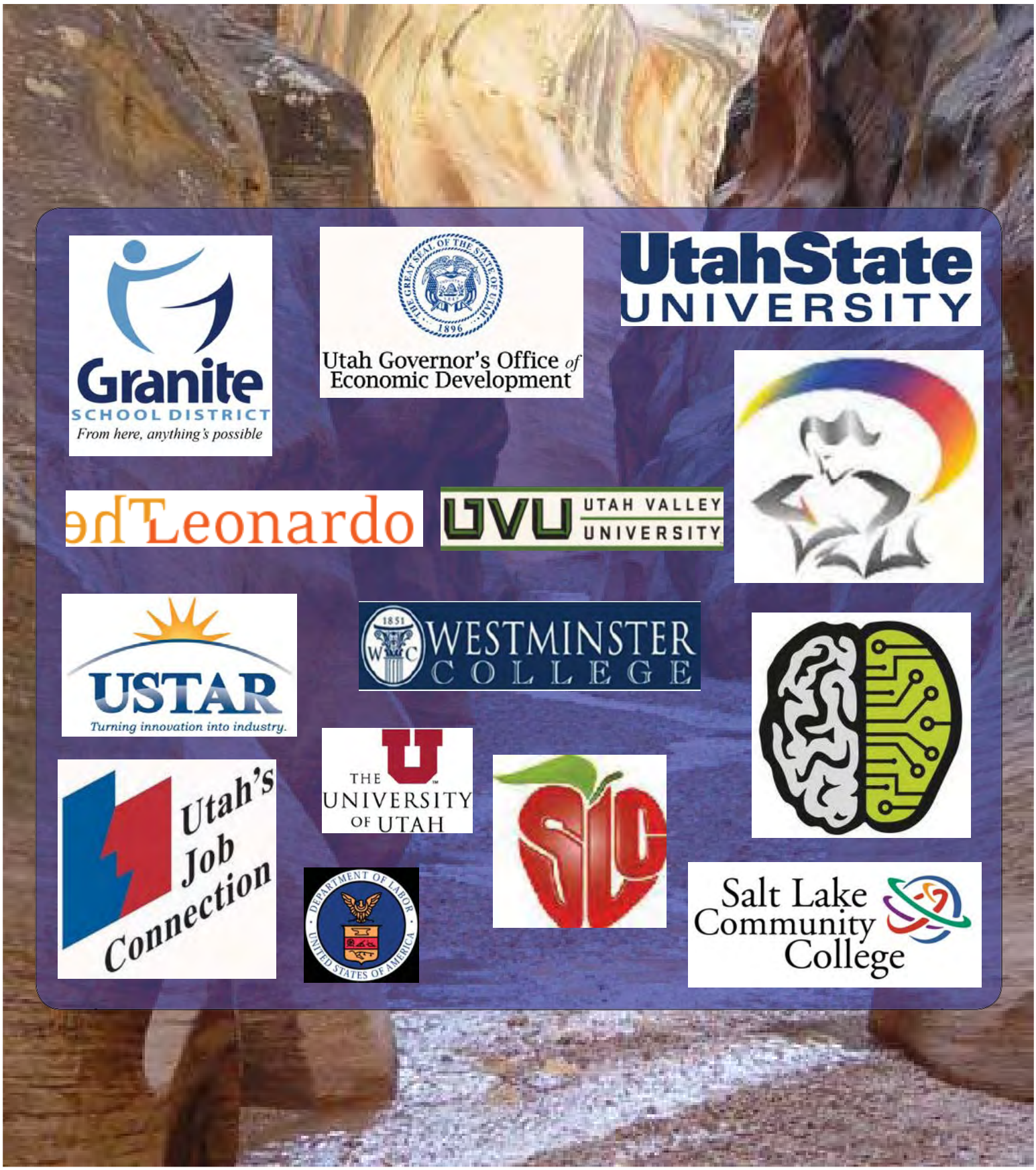
Organization's major WIRED goals and objectives	Engaging older youth (16 and older) in Science, Technology, Engineering and Mathematics (STEM) content areas during out-of-school time. Primary methods include service learning student or peer-based mentoring.
Major WIRED milestones	Establishing 4-H Youth SET Team projects in various locations in the state, both rural and urban.
Key strategic partners in WIRED	• Thanksgiving Point Institute • Various county governments through the USU Extension partnership • School districts
Positive impacts and outcomes to date	Summer of 2009 will be first series of school visits.
Ideal industry partner to support organization's efforts	Participate in activities at schools, thus sharing expertise with youth in a non formal learning environment.
How such an industry partner would be involved in the future	Participate as a "one time" volunteer opportunity or an ongoing role as a content advisor for a SET team.
Industry partner contact	Dave Francis Dave.francis@usu.edu www.utah4-h.org http://www.fourhcouncil.edu/scienceengineeringtechnology.aspx

Westminster College

Organization's major WIRED goals and objectives	The major goal is to foster an interest in STEM careers for high school and undergraduate through the creation of the Great Salt Lake Institute (GSLI) and associated student research projects.
Major WIRED milestones	• Hired GLSI Coordinator, Jaimi Butler, who will facilitate activities for the institute related to student training. • Supplies purchased to facilitate undergraduate training in research techniques. • Ten undergraduates are currently performing projects with these materials. • Lecture to high school and college students by Sylvia Earle, National Graphic Explorer in Residence on her marine research, as well as other speakers that are connected to topics that relate to the Great Salt Lake.
Key strategic partners in WIRED	Salt Lake Community College and University of Utah, Genetics Science Learning Center
Positive impacts and outcomes to date	• On-line curriculum materials are being created to reach a broader audience of students • Students are learning research skills and aptitudes through involvement on research projects
Ideal industry partner to support organization's efforts	Industry partners engaged in microbial or genetic analysis
How such an industry partner would be involved in the future	• Participate in seminar series • Provide internships to students • Help to sustain research projects beyond grant
Industry partner contact	Bonnie K. Baxter, Ph.D. 1840 South, 1300 East Salt Lake City, UT 84105 801-832-2345 bbaxter@westminstercollege.edu

The Leonardo- Science

Organization's major WIRED goals and objectives	The Leonardo- Science is committed to expanding high school, post-secondary student and adult learner access to technical education across the WIRED region through interactive experiences for informal science education.
Major WIRED milestones	The first exhibit focuses on cell structure in plants and animals and will be completed for community events effective Summer, 2009. It was prototyped at The Leonardo during the BODY WORLDS 3 exhibition and was very successful. Our next exhibit will focus on atoms and bio-molecules, with connections to nanotechnology.
Positive impacts and outcomes to date	We are providing this access through hands-on, interactive exhibits focused on topics in Biology and Biotechnology, including Cells, Energy, Bioenergetics, and Molecules/Nanotechnology. These exhibits include job/career – related information, as well as a resource table with materials provided by our WIRED partners and others. The Leonardo - Science educational outreach programs will promote STEM education at high schools and community events around Utah in partnership with WIRED organizations.
Ideal industry partner to support organization's efforts	We extend ourselves to all community and other WIRED partners who are interested in having our exhibits at their events. These exhibits are most effective with high school students and the older adult populations.
Industry partner contact	Mary Anter MAnter@theleonardo.org www.TheLeonardo.org www.UtahScienceCenter.org


Granite
SCHOOL DISTRICT
From here, anything's possible
Utah Governor's Office of Economic Development
UtahState
UNIVERSITY
Leonardo
UVU
UTAH VALLEY
UNIVERSITY
USTAR
Turning innovation into industry.
WESTMINSTER
COLLEGE
THE
UNIVERSITY
OF UTAH
Utah's
Job
Connection
Salt Lake
Community
College